



State of Utah

Department of Natural Resources

ROBERT L. MORGAN
Executive Director

Division of Oil, Gas & Mining


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Division Director

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Governor

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May 14, 2004

TO: File

FROM: Paul Baker, Senior Reclamation Biologist 

SUBJECT: Site Inspection, Cane Creek Mine, Moab Salt, LLC, M/019/005, Grand County, Utah

Date of Inspection: May 11, 2004
Time of Inspection: 12:30 to 3:30 p.m.
Conditions: Cloudy, 60's, a few rain showers
Participants: Rick Klein (Moab Salt), Paul Baker, (DOGM)

Purpose of Inspection:

The Division is reviewing a revised reclamation plan, and I wanted to look at some of the drill sites, the tailings pond, the proposed landfill, and one of the cutoff dams.

Observations:

We visited about five well sites, and three are shown in Photos 1 through 3. At all but one of these sites, there was a salt crust in an area within about 15-20 feet of the well. Outside this circle, there were thin layers of soil with some vegetation consisting of mostly shadscale and Indian ricegrass. This soil appears to have been eroded in to these areas.

Mr. Klein said the operator is working to change the plan for the landfill. The plan currently being reviewed by the Division shows demolition waste and some other material being disposed of in a canyon on the southeast side of the tailings pond. Mr. Klein showed me another area (Photo 5) with better access that is now being considered both as an area for disposal of demolition debris, and to dispose of some waste from the operation.

Soils in a large portion of the proposed landfill have been affected by salts from the tailings pond. These soils should be rinsed before being used for revegetation.

It was difficult to tell how much soil would be available for reclamation in the area we examined. The upper portion of the area, the right side of Photo 5, has not been affected by the salt tailings pond, and there could be up to several feet of soil in this area. Other areas are covered by bedrock while others have intermediate quantities that could be saved. For the landfill in the proposal before the Division, the operator has estimated about two feet of soil could be placed over the landfill. There is probably about this same amount in the new area.

We visited an area where, a few years ago, soil was brought up from near one of the cutoff dams (Photo 4). This soil was probably contaminated with salt, and although no revegetation efforts were made, there was some shadscale, rabbitbrush, and Indian ricegrass. It was my general impression that the amount of vegetation was dependent on the terrain and that the hummocky areas had more vegetation.

Finally, we went down to one of the cutoff dams and looked particularly at one of the series of sumps across the bottom of the canyon. Mr. Klein explained how the French drain and the pumps work to collect subsurface water from just above the bedrock before it can get in the Colorado River.

Conclusions and Recommendations:

It is not certain exactly how far from the reclaimed wells the surface salt contamination extends and whether it is under the thin soil layers that have accumulated. I believe it is under this soil, and, if so, remediation of the salt contamination may be much easier than previously thought. The plan the Division is currently reviewing says salt-contaminated soils will be dug up and disposed of in the landfill, and replacement soil will be brought in.

I recommend that the operator try placing a few inches of soil over some salt-contaminated soil, leaving the surface rough without disturbing the salty soil, seeding it, and watching to see what can grow and survive. Some testing of the soil might also be useful to see how deeply any contamination extends.

At the time of the inspection, I did not realize or express some of the concerns the Division might have about the new landfill site. It is a relatively open area that could be seen from many nearby areas, but the canyon landfill would be more secluded. In the new area, debris would need to be pushed against

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the hill and covered with soil, and there would probably be increased potential for erosion and exposing the trash. The operator might consider a landfill for the operations phase and keeping the canyon landfill for reclamation when access is likely to be easier.

Figure 106-9 of the plan the Division is currently reviewing shows a spike in potassium concentration from a downstream—and possibly upstream as well—Colorado River water sample. While this could be an error in the analysis, Mr. Klein agreed to look into the problem.

PBB:jb

cc: Rick Klein, Moab Salt
Will Stokes, SITLA

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Photographs

M/019/005, Cane Creek Mine, Moab Salt, LLC

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Photo 1. One of the reclaimed wells. In this picture and in Photo 2, note the salt crust near the hole and the encroaching vegetation, even on very shallow soils.



Photo 2.



Photo 3. This well is in an exposed location with little vegetation except what can be seen near the well.



Photo 4. Material brought up from near one of the cutoff dams. It was just piled here with no revegetation efforts, but note the amount of vegetation.

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Photo 5. Panorama of an area that will be proposed as a landfill. The area that would be used is against the feature just above the center and toward the right of the photo.



Photo 6. Panorama of the salt tailings pond looking approximately southeast.



Photo 7. Panorama of the salt tailings pond looking approximately north or northeast.